

Extracts of vetiver oil were found to be significant repellents and toxicants of ants, ticks, and cockroaches. Nootkatone was shown to significantly decrease ant invasion and increase mortality in fire ants. Nootkatone is an effective repellent and toxicant of ants either by itself or as an addition to other substrates, including mulches made from vetiver grass roots, diatomaceous earth, alumina, silica, clays; building materials made from either aluminum or wood; and other suitable solid substances. Nootkatone was also a repellent and toxicant to ticks; and a repellent to cockroaches. Nootkatone is non-toxic to humans and other mammals and is environmentally safe. In addition, it is believed that other extracts of vetiver oil, specifically  $\alpha$ -cedrene, zizanol and bicyclovetivenol, will be effective against ants, ticks, and cockroaches.